

CLAIMS

What is claimed is:

Claims 1-50 (Canceled)

51. (previously presented) An implantable device for delivering an active agent to a fluid environment of use, said device comprising a reservoir and a back diffusion regulating outlet for delivering fluid from the reservoir to the fluid environment, wherein the outlet has a helical flow path selected so that a length of the helical flow path is sufficient to prevent back-diffusion of external fluid through the flow path, wherein the helical flow path has a length of about 2 to about 7 cm.

52. (previously presented) An implantable device for delivering an active agent to a fluid environment of use, said device comprising a reservoir and a back diffusion regulating outlet for delivering fluid from the reservoir to the fluid environment, wherein the outlet has a helical flow path selected so that a length of the helical flow path is sufficient to prevent back-diffusion of external fluid through the flow path, wherein the helical flow path has a diameter of about 0.003 to about 0.020 inches.

53. (previously presented) The device of Claim 52, wherein the helical flow path has a length of about 2 to about 7 cm.

54. (previously presented) The device of Claim 51, wherein the helical flow path is formed by a helical groove in an exterior of a thermoplastic member and an interior of a metal capsule.

55. (currently amended) A fluid-imbibing device for delivering an active agent to a fluid environment of use, said device comprising a water-swellaable semipermeable material that is received in sealing relationship with an interior surface of an open end of an implantable reservoir and an active agent to be displaced from the device when the water-swellaable material swells, wherein the semipermeable material includes circumferential ridges.

56. (previously presented) The device of Claim 55, wherein the semipermeable material seals to the interior surface of the open end such that the semipermeable material is retained in the open end.

57. (previously presented) The device of Claim 71, wherein the semipermeable material includes circumferential ridges.

58. (previously presented) The device of Claim 57, wherein the semipermeable material ridges provide a clearance between the ridges and an interior surface of the reservoir into which the semipermeable material expands due to hydration.

59. (previously presented) The device of Claim 55, wherein the semipermeable material is a substantially cylindrical plug which expands radially upon hydration to provide a friction fit and expands longitudinally to displace the active agent.

60. (previously presented) The device of Claim 55, wherein the semipermeable material is selected from the group consisting of plasticized cellulosic materials, polyurethanes, and polyamides.

61. (previously presented) A fluid-imbibing device for delivering an active agent to a fluid environment of use, said device comprising:

an impermeable reservoir having an interior surface and an open end;

a water-swellaable, semipermeable, substantially cylindrical plug received in sealing relationship with the interior surface of the impermeable reservoir at the open end, the plug having a plurality of circumferential ridges; and

an active agent received in the reservoir to be displaced from the reservoir by passage of fluid through the plug.

62. (currently amended) The device of Claim 61, wherein the circumferential seals provide a clearance between the seals and the interior surface of the reservoir into which the plug expands due to hydration.

63. (previously presented) The device of Claim 61, wherein the plug comprises a material selected from the group consisting of plasticized cellulosic materials, polyurethanes, and polyamides.

64. (previously presented) The device of Claim 61, further comprising a movable member within the impermeable reservoir separating the active agent from a swellaable agent.

65. (previously presented) An implantable LHRH agonist delivery system comprising:
an impermeable reservoir;

a water-swellaable agent formulation within the reservoir;

an LHRH agonist within the reservoir;

a semipermeable material arranged to allow fluid to pass into the water-swellaable agent;

and

a regulating outlet arranged to allow the LHRH agonist to be delivered from the reservoir at a desired flow rate, wherein the system effectively isolates the LHRH agent from a surrounding environment of use.

66. (previously presented) The system of Claim 65, wherein the system achieves at least approximately 70% steady-state delivery on or before 14 days and continues this rate for at least one year.

67. (previously presented) The system of Claim 65, wherein the LHRH agent is effectively isolated from the environment of use for at least two months.

68. (previously presented) The system of Claim 65, wherein the LHRH agonist is leuprolide acetate.

69. (previously presented) The device of Claim 51, wherein the helical flow path has a diameter of about 0.003 to about 0.020 inches.

70. (previously presented) The device of Claim 52, wherein the helical flow path is formed by a helical groove in an exterior of a thermoplastic member and an interior of a metal capsule.

71. (currently amended) A fluid-imbibing device for delivering an active agent to a fluid environment of use, said device comprising a water-swellaable semipermeable material that is received in sealing relationship with an interior surface of an open end of an implantable reservoir and an active agent to be displaced from the device when the water-swellaable material swells, wherein the semipermeable material is a substantially cylindrical plug which expands radially upon hydration to provide a friction fit and expands longitudinally to displace the active agent.

72. (previously presented) The device of Claim 71, wherein the semipermeable material seals to the interior surface of the open end such that the semipermeable material is retained in the open end.

73 (currently amended) The device of Claim 55, wherein the semipermeable material seals provide a clearance between the seals and an interior surface of the reservoir into which the semipermeable material expands due to hydration.

74. (previously presented) The device of Claim 71, wherein the semipermeable material is a substantially cylindrical plug which expands radially upon hydration to provide a friction fit and expands longitudinally to displace the active agent.

75. (previously presented) The device of Claim 71, wherein the semipermeable material is selected from the group consisting of plasticized cellulosic materials, polyurethanes, and polyamides.